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(FILE 'HOME' ENTERED AT 11:12:31 ON 21 SEP 2000)  
FILE 'CA' ENTERED AT 11:12:43 ON 21 SEP 2000  
L1 13498 S (BORON OR BORATE OR BORIC) (7A) (DETECT? OR DETERMIN?  
OR MEASUR? OR MONITOR? OR ASSAY? OR TEST? OR ANAL? OR ESTIMAT? OR SENSE  
OR SENSOR OR SENSING)  
L2 497 S L1 AND TITR?  
L3 170 S L1 AND (LUBRIC? OR OIL)  
L4 6 S L2 AND L3  
L5 2 S BODYMAKER  
FILE 'REGISTRY' ENTERED AT 11:19:50 ON 21 SEP 2000  
L6 1 S CITRIC ACID/CN  
SEL NAME L6  
FILE 'CA' ENTERED AT 11:20:14 ON 21 SEP 2000  
L7 7 S (L6 OR E1-7) AND L2  
L8 14 S L4-5, L7

=> d 18 bib, ab 1-14

**L8 ANSWER 1 OF 14 CA COPYRIGHT 2000 ACS**

AN 132:52003 CA  
TI Rapid analysis of stratal fluids using electrodes with  
semiconductor membranes  
AU Burakhta, V. A.; Khasainova, L. I.  
CS West Kazakhstan Agricultural University, Ural'sk, 417025,  
Kazakhstan  
SO J. Anal. Chem. (1999), 54(12), 1155-1157  
CODEN: JACTE2; ISSN: 1061-9348  
PB MAIK Nauka/Interperiodica Publishing  
DT Journal  
LA English  
AB Unified rapid and highly reliable procedures were developed for  
the\*\*\*detn\*\*\* of pH, carbonates, bicarbonates, and \*\*\*borates\*\*\*  
in stratal waters, and also mercaptans and sulfides in condensates  
using electrodes with semiconductor membranes made of p-type germanium,  
indium arsenide, and indium antimonide. It was first revealed that a  
membrane made of semiconductor indium antimonide is sensitive to pH and  
sulfur-contg. compds. As a result, indium antimonide was used for  
prepg. an indicator electrode with high mech. strength and resistance to  
corrosive media and non-aq. solvents. The working surface of this  
electrode can be renewed by simply removing the upper layer.  
RE.CNT 10  
RE  
(1) Burakhta, V; Cand Sci (Techn) Dissertation Moscow: Moscow Inst Fine  
Chem  
Tekhnol 1991  
(2) Karaulova, E; Chemistry of Oil Sulfides 1970  
(3) Karaulova, E; Khimiya sul'fidov nefiti 1970  
(4) Kiyanskii, V; Byull Izobret 1990, 20  
(6) Kiyanskii, V; Zh Anal Khim 1987, V42(6), P1138 CA  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

**L8 ANSWER 2 OF 14 CA COPYRIGHT 2000 ACS**

AN 130:204478 CA  
TI Analytical method and apparatus therefor

IN Bevan, Christopher David; Hill, Alan Peter; Reynolds, Derek Peter  
 PA Glaxo Group Limited, UK  
 SO PCT Int. Appl., 82 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9913328	A1	19990318	WO 1998-GB2711	19980909
	W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	AU 9890834	A1	19990329	AU 1998-90834	19980909
	EP 1012599	A1	20000628	EP 1998-942856	19980909
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			
	PRAI GB 1997-19142		19970909		
	WO 1998-GB2711		19980909		

AB The present invention relates to an improved anal. method and app. therefor, in particular to a method and app. for continuous \*\*\*titrn\*\*\*. in which at least one parameter of at least one compd. in a test mixt. may be monitored as the compn. of the mixt. is continuously varied.

RE.CNT 3

RE

- (1) Nippon Parkerizing; JP 01078164 A 1989
- (2) Sarasep; EP 0345782 A 1989
- (3) Yarnitzky, C; INSTRUMENTATION SCIENCE & TECHNOLOGY 1995, V23(2), P91 CA

**L8 ANSWER 3 OF 14 CA COPYRIGHT 2000 ACS**

AN 111:42480 CA

TI Quantitative method for \*\*\*determination\*\*\* of \*\*\*boron\*\*\* in \*\*\*lubricants\*\*\*

AU Dagaeva, I. G.; Popovich, T. D.; Boguslavets, D. B.; Torchun, Z. M.;

Dmitruk, M. O.; Maksimova, A. I.

CS VNIIPKneftekhim, Kiev, USSR

SO Neftepererab. Neftekhim. (Kiev) (1988), 34, 34-6

CODEN: NEFNBY; ISSN: 0548-1406

DT Journal

LA Russian

AB B is detd. in Mannich-base \*\*\*lubricating\*\*\* \*\*\*oil\*\*\* additives or cutting fluids by potentiometric \*\*\*titrn\*\*\*. with 0.1

N KOH in iso-PrOH. The sample is dissolved in C<sub>6</sub>H<sub>6</sub>-iso-PrOH or MePh-iso-PrOH. The relative deviation of this method is <10%, and the results obtained are in line with those obtained by a spectrochem. method.

**L8 ANSWER 4 OF 14 CA COPYRIGHT 2000 ACS**

AN 109:42096 CA

TI Corrosion of cemented tungsten carbide punch material immersed in several commercial drawn and ironed canmaking lubricants

AU Cox, Edward P.

CS Mater. Anal., Inc., Dallas, TX, 75238, USA

SO Lubr. Eng. (1988), 44(4), 353-60

CODEN: LUENAG; ISSN: 0024-7154

DT Journal

LA English

AB Lab. corrosion tests were conducted on cemented W carbide coupons, similar in compn. to \*\*\*bodymaker\*\*\* punches, in heated and stirred solns. contg. com. synthetic lubricants, and one sol. oil. Corrosion rate and Co extn. data revealed low corrosion rates in all synthetic lubricants regardless of whether the lubricant solns. were prepd. with distd. Water or tap water. Biocide addns. caused no significant change in corrosion behavior.

**L8 ANSWER 5 OF 14 CA COPYRIGHT 2000 ACS**

AN 102:178301 CA

TI Coulometric thermometric acid-base and redox \*\*\*titrations\*\*\*

AU Zsigrai, Istvan J.; Meszaros Szecsenyi, Katalin; Dimitrijevic, Ljiljana M.

CS Fac. Sci., Univ. Novi Sad, Novi Sad, YU-21000, Yugoslavia

SO Glas. Hem. Drus. Beograd (1984), 49(10), 627-31

CODEN: GHDBAX; ISSN: 0017-0941

DT Journal

LA English

AB Thermometric acid-base and redox \*\*\*titrns\*\*\* . with coulometric generation of \*\*\*titrant\*\*\* are described. The change in temp. during the \*\*\*titrn\*\*\* . is followed by a differential technique with 2 thermistors connected in opposition in a Wheatstone bridge. Micromol amts. of sulfuric, citric and boric acids, triethanolamine, pyridine, Sb(III), ascorbic acid, and Fe(II) were detd. The relative error of detn. was <1.3%.

**L8 ANSWER 6 OF 14 CA COPYRIGHT 2000 ACS**

AN 95:54102 CA

TI Automatic numerical evaluation of potentiometric

\*\*\*titrations\*\*\*

AU Bender, John V.; Kujawa, Edward P.

CS Brinkmann Instrum. Inc., Westbury, NY, 11590, USA

SO Can. Res. (1981), 14(3), 29-32

CODEN: CAREDM; ISSN: 0319-1974

DT Journal

LA English

AB The microprocessor-controlled E 636 \*\*\*Titrprocessor\*\*\* performs potentiometric \*\*\*titrn\*\*\* . with improved accuracy over other instruments by controlling the \*\*\*titrn\*\*\* . performance as well as evaluating endpoints from the data gathered. The E 636 can be programmed to change the vol. of \*\*\*titrant\*\*\* added to achieve a const. Change of measured potential per addn. Control parameters are

also available to adjust time between \*\*\*titrant\*\*\* addns., stop the \*\*\*titrn\*\*\* upon meeting 1 of several preset conditions, or ignore endpoints below a set threshold or outside a set potential range. An expanded version of the E 635 can carry out 2 different \*\*\*titrns\*\*\* on the same or sep. samples and can output data directly to a host computer. Examples given include \*\*\*titrn\*\*\* of \*\*\*citric\*\*\* \*\*\*acid\*\*\*, HCl + boric acid, acid in used \*\*\*oil\*\*\*, and carboxyl end groups in synthetic fibers.

✓ L8 ANSWER 7 OF 14 CA COPYRIGHT 2000 ACS

AN 93:125089 CA

TI \*\*\*Determination\*\*\* of \*\*\*boron\*\*\* oxide in silicates by potentiometry

AU Fodor, Mrs. Peter

CS Szilikatipari Kozp. Kut. Tervezo Intez., Budapest, Hung.

SO Epitoanyag (1980), 32(5), 198-200

CODEN: EPITAA; ISSN: 0013-970X

DT Journal

LA Hungarian

AB The sample was fused with Na<sub>2</sub>CO<sub>3</sub> at 1000.degree., the melt was dissolved in H<sub>2</sub>SO<sub>4</sub>, and interfering cations (Al, Fe, Ti, Ca, Mg, etc.) were pptd. with \*\*\*citric\*\*\* \*\*\*acid\*\*\*. The soln. was filtered, and the filtrate was neutralized to pH 6.9 by using a pH meter. Mannitol soln. was added and the soln. was \*\*\*titrated\*\*\* while stirring continuously with 0.1M NaOH until pH 6.9 was restored. B<sub>2</sub>O<sub>3</sub> was calcd. in the usual way from the vol. of NaOH. The method was tested on international NBS stds. The std. deviation was +/-1.3%, for low B<sub>2</sub>O<sub>3</sub> contents it was somewhat higher. The anal. time is 40 min.

✓ L8 ANSWER 8 OF 14 CA COPYRIGHT 2000 ACS

AN 86:173917 CA

TI \*\*\*Titrimetric\*\*\* \*\*\*determination\*\*\* of \*\*\*boron\*\*\* in succinimide additives

AU Sosnina, N. P.; Barsukova, N. V.

CS USSR

SO Tr., Vses. Nauchno-Issled. Inst. Pererab. Nefti (1976), 14, 243-5

CODEN: TIPNA7

DT Journal

LA Russian

AB The method consisting of oxidn. of succinimide additives (contg. .ltoreq.1% B) for \*\*\*lubricating\*\*\* \*\*\*oils\*\*\* and following \*\*\*titrn\*\*\* with NaOH soln. was developed. Oxidn. was done in a calorimetric bomb. To increase the dissocn. const. of H<sub>3</sub>BO<sub>3</sub>, complex glycerolboric acid or mannitoboric acid were formed by adding the appropriate alcs. The pH indicator was phenolphthalein. Detn. Required 30-40 min, compared to 3 days needed by the conventional method.

✓ L8 ANSWER 10 OF 14 CA COPYRIGHT 2000 ACS

AN 78:75834 CA

TI Methods for controlling triethanolaminobentonite and boric acid ointment, prepared from a triethanolaminobentonite-based water-soluble emulsion

AU Lekhan, A. S.; Solonskaya, N. T.; Eremina, Z. I.; Salo, D. P.

CS Khark. Farm. Inst., Kharkov, USSR

SO Farm. Zh. (Kiev) (1972), 27(6), 61-5

CODEN: FRZKAP

DT Journal

LA Ukrainian

AB Triethanolaminobentonite (TEAB) consists of 88-90% bentonite (I) and 10-12% triethanolamine (II). II was extd. from an ointment with 0.1N HCl and detected with 5% CoCl<sub>2</sub> in the presence of aq. NH<sub>3</sub> or with CuSO<sub>4</sub> to give a purple-violet and blue color, resp. I was detected by igniting a sample moistened with a Co(NO<sub>3</sub>)<sub>2</sub> soln. or by dissolving it in HCl, and detecting leached Al with 8-hydroxyquinoline at pH 5. II was also detd. quant. By the Kjeldahl method with an error  $\pm 1.82\%$ . A new TEAB-based H<sub>2</sub>O-sol. emulsion was also developed contg. peach \*\*\*oil\*\*\* 35, TEAB 8, and water 57%. H<sub>3</sub>BO<sub>3</sub> was detd. in the TEAB-based ointment by extn. with hot EtOH and \*\*\*titrn\*\*\* of a glycerol soln. of the ext. with NaOH visually using phenolphthalein or potentiometrically with a glass-AgCl electrode. The error was 2.91 and 2.94%, resp.

L8 ANSWER 11 OF 14 CA COPYRIGHT 2000 ACS

AN 75:132837 CA

TI Deep water analytics and geochemistry. 6

AU Reti, Sandor

CS Hung.

SO Banyasz. Kohasz. Lapok, Koolaj Foldgaz (1971), 4(1), 23-6

CODEN: KOFOB6

DT Journal

LA Hungarian

AB For the \*\*\*detn\*\*\* of \*\*\*borates\*\*\* in deep water 2 methods were developed, consisting of the same steps but using different reagents: (1) adjust to a definite pH value, (2) add an activator reagent of the same pH, (3) \*\*\*titrate\*\*\* with carbonate-free 0.02N Ba(OH)<sub>2</sub> soln. to the same pH, using the potentiometric end-point control, (5) repeat steps 2 and 3 until there is no further change of pH upon addn. of the activator. Invert sugar (s) or mannitol (m) can be used as activators. In methods A activator is 8s, 4m and 4s, 2m wt. %, resp. When using method B, the amt. of fixed H<sub>3</sub>BO<sub>3</sub> (i.e., present as borate at the initial pH) must be taken into consideration. This amt. depends on the ionic strength,  $\mu$ , of the sample. Values of the corresponding multiplication factor vary between 1.05 and 1.11 for  $\mu$  values of 0.0-0.5, resp.; in normal cases an av. factor of 1.09 can be used. Accuracy of the methods: As = 98.9  $\pm$  0.6; Am = 98.4  $\pm$  0.7; Bs = 99.8  $\pm$  1.0 and Bm = 100.1  $\pm$  0.4 (theoretical value = 100). The BO<sub>2</sub><sup>-</sup> content in various \*\*\*oil\*\*\* field deep waters varies considerably, ranging from 17 to 617 mg HBO<sub>2</sub>/l.; higher contents usually occur in the deeper layers. The HBO<sub>2</sub><sup>-</sup> content can be used for layer identification and for differentiation between deep waters and industrial sewage. The B/Cl ratio in Hungarian deep waters is .apprx.10-100 times higher than in ordinary sea water.

L8 ANSWER 12 OF 14 CA COPYRIGHT 2000 ACS

AN 71:27165 CA

TI Potentiometric \*\*\*determination\*\*\* of \*\*\*boron\*\*\* in nonstandard brasses and bronzes

AU Dolgoplova, G. M.

CS USSR

SO Tr., Gos. Nauch.-Issled. Proekt. Inst. Splavov Obrab. Tsvet. Metal.

(1968), No. 27, 256-8

CODEN: TSOTAM

DT Journal

LA Russian

AB Dissolve 1 g. (for 0.1-0.2% B) or 0.5 g. (for 0.5% B) of alloy in a mixt. of 20 ml. 1:1 HCl and 3 ml. HNO<sub>3</sub> by heating under reflux. Neutralize the soln. with 5% NaOH to the beginning of hydroxide pptn. and pass it through a column of KU-2 ion-exchanger, H<sup>+</sup> form. Wash the column with 250 ml. H<sub>2</sub>O, and neutralize the soln. and washings with 10% NaOH to methyl orange. If the alloy contains Al, add 10 ml. 5% \*\*\*citric\*\*\* \*\*\*acid\*\*\*. Boil under reflux to remove CO<sub>2</sub>, cool, and adjust to pH 6.9 with 0.02N NaOH. Add 30 ml. invert sugar and \*\*\*titrate\*\*\* with 0.02N NaOH until pH becomes 6.9 again. \*\*\*Titrate\*\*\* a blank treated in the same way. The mean relative error is 4% for 0.1% B, 2.5% for 0.5% B.

✓ L8 ANSWER 13 OF 14 CA COPYRIGHT 2000 ACS

AN 69:70596 CA

TI Conditions for the existence of boron citrate complexes in solution

AU Karazhanov, N. A.; Kalacheva, V. G.

CS USSR

SO Izv. Akad. Nauk Kaz. SSR, Ser. Khim. (1968), 18(3), 1-6

CODEN: IKAKAK

DT Journal

LA Russian

AB The cond., viscosity, and d. of isomolar solns. of citric and \*\*\*boric\*\*\* acids were \*\*\*measured\*\*\* at total concns. 0.001-0.6M and at 25 and 60.degree.. The deviation of the cond. from additivity and the additive cond. of \*\*\*citric\*\*\* \*\*\*acid\*\*\* multiplied by the sq. root of the viscosity were plotted vs. the mole % H<sub>3</sub>BO<sub>3</sub>. In all cases, the curves had a max. at the ratio of boric to \*\*\*citric\*\*\* \*\*\*acids\*\*\* of 1/2. The stability of the B-citrate complex decreases with increasing temp. At a total acid concn. of 0.1M, the calcd. pH of the isomolar solns. differed only insignificantly from the exptl. values. At 0.6M, however, it was 0.3-0.7 pH units lower. Thus, the B-citrate complex is a stronger acid than the single components. The 0.6M solns. of H<sub>3</sub>BO<sub>3</sub>, \*\*\*citric\*\*\* \*\*\*acid\*\*\*, and their 1:2 mixt. were \*\*\*titrated\*\*\* conductometrically with NaOH. In a soln. of 1:2 mixt., a complex exists at pH 1.0-2.9, which has considerably higher acid strength than \*\*\*citric\*\*\* \*\*\*acid\*\*\*. The complex is decompd. at pH > 2.9, where no max. is exhibited by the plot of the cond. vs. mole % H<sub>3</sub>BO<sub>3</sub>.

✓ L8 ANSWER 14 OF 14 CA COPYRIGHT 2000 ACS

AN 69:64316 CA

TI Potentiometric \*\*\*determination\*\*\* of \*\*\*boron\*\*\* in an oxidizing medium

AU Negina, V. R.; Kozyreva, E. A.; Balakshina, A. V.; Chikisheva, L. S.

CS USSR

SO Zavod. Lab. (1968), 34(3), 278-9

CODEN: ZVDLAU

DT Journal

LA Russian

AB A 200-mg. sample of Ti boride contg. impurities of Ti, Fe, Al, Mg, Zr, Cu, Pb, Sn, Zn, Cr, Ni, Co, W, and (or) Si was dissolved in a mixt. of 2 ml. H<sub>2</sub>SO<sub>4</sub>, 2 g. K<sub>2</sub>S<sub>2</sub>O<sub>7</sub>, and a few drops of HNO<sub>3</sub> with heating in a

quartz flask, then dild. to 200 or 250 ml. To an aliquot contg. 5-10 mg. B were added 10 ml. of 5% \*\*\*citric\*\*\* \*\*\*acid\*\*\*, then 6N NaOH to neutralization at pH 6.9, 50 ml. of satd. mannitol soln., and H2O to 150 ml. The mannitol-H3BO3 was \*\*\*titrated\*\*\* potentiometrically with 0.1N NaOH to pH 6.9 (glass and Ag/AgCl electrodes). The relative error in detn. of 5 mg. B in the presence of 35 mg. of the above admixts. Was .ltoreq.1%. If only Ti was present, 1-5 ml. of 30% H2O2 was added to 150 ml. of the sample soln. as a complexing agent. In this case the relative error for 5 mg. B in the presence of 15 mg. Ti was 0.5-1%, and for 0.2 mg. B when Ti/B = 3 it was .+- .3%; however, it rose markedly when Ti/B > 3.

=> log y

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